**D&S Practice**

Differentiate and Simplify:

1. Use product rule $(x + 1)x^{\frac{1}{3}}$
2. $\sqrt{x} - \frac{1}{\sqrt{x}}$
3. Use product rule $(x^2 + 1)(x^2 - 2)$
4. Use quotient rule $\frac{x^3}{x^2 + 1}$
5. Use quotient rule $\frac{x^{\frac{1}{3}}}{x + 1}$
6. $x^2 + \frac{1}{x^2}$

Use the Product Rule to differentiate and Simplify:

1. $y = \sqrt{x}(1 - x^2)$
2. $y = x^{\frac{2}{3}}(1 - x^2)$
3. $y = x \left(1 - \frac{1}{\sqrt{x}}\right)$

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1. Explain Newton's First Law of Motion in your own words.

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